

ECG records blackout event



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A man in his 60s loses consciousness while an ECG is being recorded.

PRESENTATION

A 62-YEAR-OLD architect presented to the emergency department of his local hospital concerned about prolonged epigastric discomfort. This had been going on for six or seven hours and he assumed it was indigestion. The pain was increasing and was now associated with some nausea and sweating.

On arrival his initial assessment demonstrated a BP of 140/90 mmHg and a regular pulse with a rate of 76/min. Examination was otherwise

Q1. Based on the ECG, which of the following is the most likely cause of the patient's blackout?

1. Severe indigestion – possibly oesophageal spasm with subsequent vasovagal event
2. Ventricular arrhythmia associated with long QT syndrome
3. Anterior myocardial infarction with ventricular tachycardia
4. Non-STEMI affecting the anterior and inferior walls with a ventricular arrhythmia
5. Complete heart block.

Q2. The doctor attending the patient called for a defibrillator and there was significant delay before it was effectively charged. If you were looking after the patient, what would you do next?

1. Put in an IV cannula
2. Administer oxygen
3. Commence CPR
4. Call for another defibrillator
5. Give the patient a very firm thump on the lower portion of his sternum.

unremarkable. An ECG was recorded immediately and is shown on the page opposite. While this was being performed the patient suddenly lost consciousness (see questions above).

DISCUSSION

This ECG demonstrates marked ST elevation over the anterior leads indicative of ST elevation myocardial infarction (STEMI). Q-waves are present in lead

V1-V4 which indicates some infarction has already occurred. This is consistent with the patient's fairly late presentation, with the duration of symptoms being over seven hours.

The rhythm strip indicates a rapid wide complex tachycardia that is fairly regular and consistent with ventricular tachycardia.

Left untreated this is likely to degenerate into ventricular fibrillation.

This patient is experiencing an anterior myocardial infarct and has just experienced an episode of VT as a result. The correct answer for question 1 is therefore No.3.

The correct management is immediate defibrillation. Where the defibrillator is not charging quickly it is necessary to commence CPR. The correct answer for question 2 is therefore No.3.

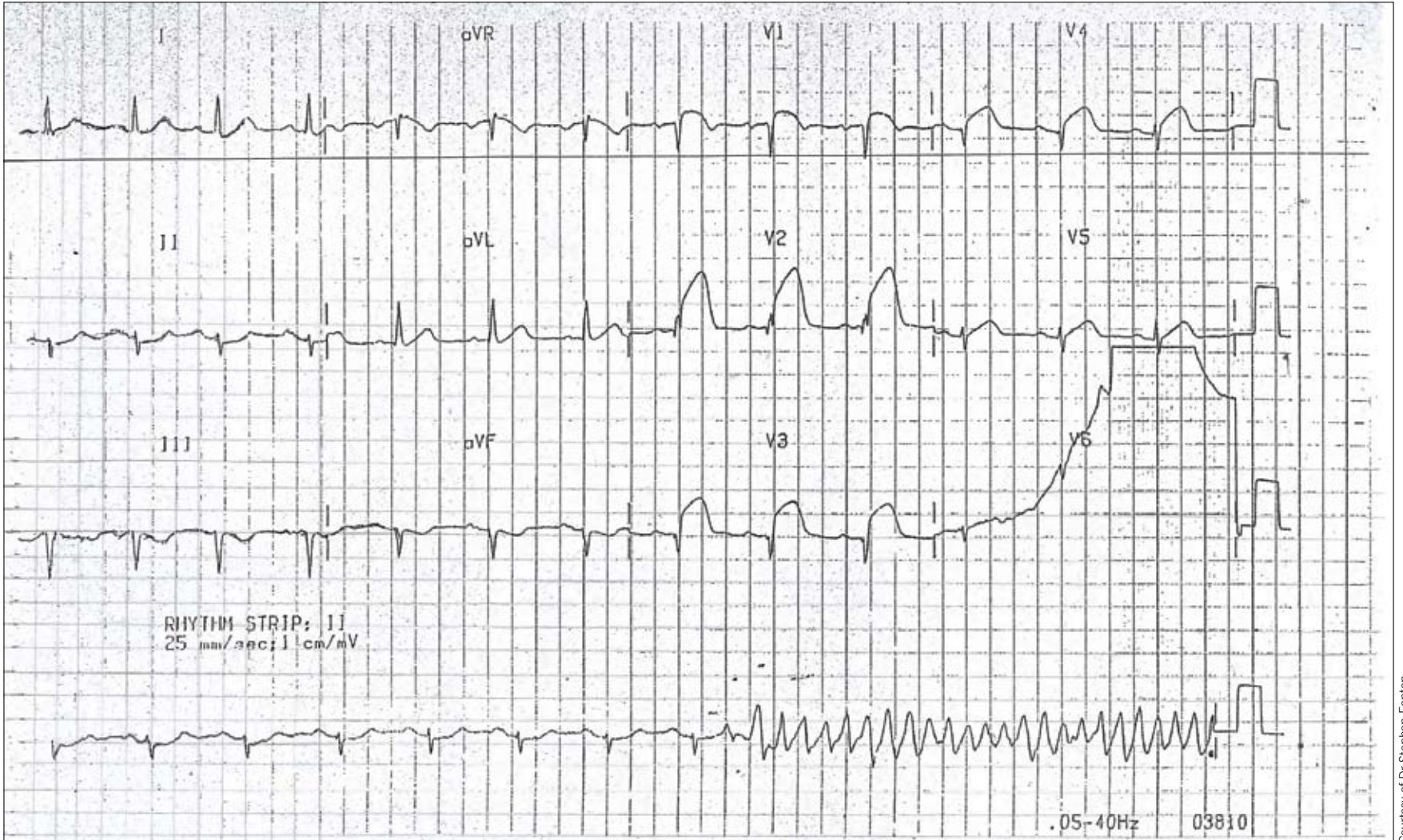
Anecdotal evidence suggests a firm thump to the patient's lower sternum will sometimes achieve restoration of sinus rhythm.

OUTCOME

This patient was successfully managed with subsequent defibrillation and reverted to sinus rhythm. He was transferred urgently to the cardiac catheter laboratory where it was discovered he had total occlusion of the left anterior descending artery. This was treated with angioplasty and stenting.

There was some residual left ventricular dysfunction of moderate degree and further review and subsequent echocardiography will be required to assess this patient's progress.

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